

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF CIVIL & WATER ENGINEERING
FACULTY OF INDUSTRIAL TECHNOLOGY
BACHELOR OF ENGINEERING (HONOURS) DEGREE
PART V SECOND SEMESTER EXAMINATION – MAY 2015

PROFESSIONAL & CIVIL ENGINEERING PRACTICE & ETHICS–TCW 5203

INSTRUCTIONS

Time : 3 hours

Total Marks: 100

Answer any **FOUR** out of six questions

All questions carry 25 marks each

QUESTION 1

a) Explain why a corporate member of the ZIE would, upon becoming insolvent, face expulsion from the institution?

(4 marks)

b) In point format, differentiate between the functions of the ZIE and Engineering Council of Zimbabwe (ECZ).

(5 marks)

c) List 4 grades of ZIE membership and briefly outline the qualifications and/or experience required for each grade.

(16 marks)

QUESTION 2

i) List 4 types of tender used in the construction industry.

(4 marks)

ii) Under what circumstances would a Client opt for each of these types? Give advantages and disadvantages of using each of the tender types given in (i) for a Client or Owner organisation.

(16 marks)

iii) List any 5 documents that you expect to find in a Tender

(5 marks)

QUESTION 3

a) What is professional indemnity in relation to practicing Engineers?

(4 marks)

b) Cite 3 instances and expand on each, when an Engineer can be deemed guilty of professional negligence.

(9 marks)

c) Outline the measures you would take as a Design Office Manager to reduce instances of professional negligence in your organisation.

(12 marks)

Question 4

The construction organisation you lead has been tasked with carrying out the addition of 3 floors to an existing building in order to increase occupancy. Your experience leads you to suspect that the foundation has not been designed for the additional floors despite the availability of a certified professional design for the actual extension of the 3 floors.

Assuming you accept the job, outline in point format, the steps you will take in line with your professional obligations citing relevant legislation and professional & ethical practice codes of conduct where applicable.

(25 marks)

QUESTION 5

Your organisation is advising a Client who intends to embark on a construction project. The Client regards quality as the most important aspect of the project but is still awaiting completion of some aspects of the design. To meet the scheduled completion date, construction has to commence before finalisation of the design.

Carry out a review of the applicability of 3 types of Contract which you deem suited to the project and make recommendations to the Client on the most suitable type to use. Your analysis must include the advantages and disadvantages of each type of contract and clearly state the reasoning for the recommended type for this project.

(25 marks)

QUESTION 6

a) ZIE Rules of Conduct govern professional conduct of its members of all grades. List the rules of conduct and briefly explain why each one is necessary, citing brief examples where applicable. **(17 marks)**

b) The Client, Engineer, Contractor and Employees all have Health and Safety legal responsibilities on a construction site. In point format List and Explain their respective responsibilities.

(8 marks)

END OF PAPER